

What is claimed is:

1. A pre-formatted optical data storage tape comprising:

an elongated linear polymer layer having at least one pattern of optically readable embossments on at least one surface of the polymer layer; and

an optical recording layer covering the pattern of optically readable embossments of the elongated linear polymer layer, wherein the optical recording layer is adapted such that recorded marks may be made in the recording layer by directing a focused source of energy into the recording layer.

2. A pre-formatted optical data storage tape according to claim 1, wherein the tape is provided on one of an open reel, a cartridge, a cassette having a single hub, and a cassette having dual hubs.

3. A pre-formatted optical data storage tape according to claim 1, wherein the tape has a thickness of between 4 microns and 1000 microns.

4. An optical information storage system including the tape of claim 1, and further comprising:

an optical head array adapted to read the pattern of optically readable embossments on the optical data storage tape and any recorded marks made in the recording layer; and

a transport system for moving the tape with respect to the optical head array.

5. An optical information storage system according to claim 4, further comprising an optical compensator positioned between the optical head array and the optical data storage tape.

6. An optical information storage system according to claim 4, wherein the optical head array is adapted to write recording marks in the recording layer of the optical data storage tape.

7. A pre-formatted optical data storage tape according to claim 1, wherein the pattern of optically readable embossments include lands and grooves.

8. A pre-formatted optical data storage tape according to claim 1, wherein the recording layer provides at least one of reflective, dye polymer, write-once (WORM), erasable, PROM (read-only and recordable combined), read-only (ROM), and protection functionality.

9. A pre-formatted optical data storage tape according to claim 1, wherein the polymer layer comprises at least one of polycarbonate, acrylic, cellulose acetate butyrate, styrene, polyvinyl chloride, radiation-curable photopolymer, and formable polymer.

10. A pre-formatted optical data storage tape according to claim 1, further comprising a carrier layer supporting the polymer layer.

11. A pre-formatted optical data storage tape according to claim 10, wherein the carrier layer comprises one of polyethylene terephthalate (PET), polyethylene naphthalate (PEN), polyimide, and polyaramid.

12. A pre-formatted optical data storage tape according to claim 1, wherein the polymer layer includes a plurality of the patterns of optically readable embossments and wherein the patterns are parallel.

13. A pre-formatted optical data storage tape according to claim 1, wherein the recording layer comprises a dielectric layer, a phase change recording layer, and a reflection/thermal control/nucleation layer.

14. A pre-formatted optical data storage tape according to claim 1, further comprising a back coat layer secured to a surface of the elongated linear polymer layer

opposite the surface of the polymer layer having the pattern of optically readable embossments, and wherein the back coat layer is adapted for at least one of friction control, thermal conductivity, and dissipation of static electricity.

15. A pre-formatted optical data storage tape according to claim 1, wherein the pattern of optically readable embossments includes features readable by DVD-type optical heads.

16. A pre-formatted optical data storage tape according to claim 1, wherein the pattern of optically readable embossments includes at least one of header information, servo and error correction information, pre-recorded digital information, and pre-recorded analog information.

17. A pre-formatted optical data storage tape comprising:

an elongated linear polymer layer having a plurality of parallel patterns of optically readable embossments on at least one surface of the polymer layer; and

a recording layer covering the patterns of optically readable embossments of the elongated linear polymer layer, wherein the recording layer is adapted such that recorded marks may be made in the recording layer by directing a focused source of energy into the recording layer.

18. An optical information storage system including the tape of claim 16, and further comprising:

a laser head array adapted to read the patterns of optically readable embossments on the optical data storage tape and any recorded marks made in the recording layer; and

a system for moving the tape with respect to the laser head array.

19. An optical information storage system according to claim 17, wherein the laser head array is adapted to write recording marks in the recording layer.

20. A pre-formatted optical data storage tape according to claim 16, wherein the patterns of optically readable embossments include lands and grooves, and wherein side walls of the grooves are wobbled for tracking purposes.

21. A pre-formatted optical data storage tape according to claim 16, wherein the patterns of optically readable embossments include at least one of header information, servo and error correction information, pre-recorded digital information, and pre-recorded analog information.